REMARKS

This application has been carefully reviewed in view of the above-referenced Office Action, and reconsideration is requested in view of the following remarks.

Interview Summary

On February 24, 2005, the undersigned telephoned Examiner Salteralli regarding the present application. Examiner Salteralli was kind enough to discuss the outstanding rejection briefly in order to clarify the undersigned's understanding of the reasoning behind the rejection. Examiner Salteralli indicated that the Liu reference shows a main board and a modem that share main circuit board's processor and memory resources. He further clarified that communications flowing from the modem to a DHCP server pass through the modem driver, which uses the shared resource of the processor and memory of the main circuit board. Thus, the reasoning behind the rejection is that the IP address information periodically flows through the main circuit board.

Examiner Salteralli indicated that his search did not find the process using the discovery packet as disclosed in the specification and suggested clarification of the claims to more particularly describe the process and apparatus to overcome the rejections. When asked, Examiner Salteralli further indicated that adding limitations to the modem to incorporate a separate processor would appear to overcome the existing art rejection.

The undersigned appreciates Examiner Salteralli's time in clarifying the rejection and providing feedback on suggested solutions.

Regarding the Election Requirement

Applicant hereby affirms the telephone election made on November 2, 2004 without traverse.

Regarding the Objection the Abstract

The Abstract has been amended to correct the minor typographical error pointed out by the Examiner. Reconsideration is respectfully requested.

Regarding the Rejections Under 35 U.S.C. §103

Applicants present below both amendments and arguments to address the current rejections. Reconsideration in view of the following is requested:

Claim Amendments

Based upon the discussions noted above with Examiner Salteralli, most claims have been amended to more clearly describe the devices and methods claimed so that the existing distinctions are clear over the cited art. In particular:

Independent claim 1 has been amended to highlight that the Discovery Packet is transmitted from the modem to the Main Circuit Board via the Interface in order to permit the Main Circuit Board to discover the IP address of the Modem. Moreover, the claim has been clarified by adding that the Main Circuit Board monitors the interface for Discovery Packets addressed to the broadcast address. None of the cited art describes a broadcast Discovery Packet as taught and claimed by Applicants. Moreover, none of the cited references disclose a Main Circuit Board monitoring an interface with a modem for such broadcast Discovery Packets, nor do they describe ascertaining a modem's IP address from a Discovery Packet as described and claimed. In view of this amendment, claims 1-16 are believed clearly allowable.

Dependent claim 13 has been reformatted in Markush format so that claims 14 and 15 could be amended without additional claim fees. This claim has the scope of original claims 13-15. Claim 14 was amended to call out a configuration having a separate processor in each of the modem and the Main Circuit Board. Claim 15 was amended to call for the Discovery Packet to be a UDP packet. Claim 16 has been amended to account for the amendments to claim 1.

Independent claim 17 was amended in a manner similar to claim 1 to clarify that the communication of the Discovery Packet is from the modem to the Main Circuit Board via the interconnection using a broadcast address, and to further clarify. As noted previously, none of the cited art discloses or suggest a Discovery Packet or the arrangement of claim 17 to facilitate discovery of an IP address. In view of this amendment, claims 17-33 are believed clearly allowable. Claim 32 had been represented in its original form as noted below.

Dependent claim 28 has been amended in the same manner as claim 13. Claim 29 calls for separate processors in both the modem and the Main Circuit Board. Dependent claim 30 further calls out details of arrangements of the interconnection between the modem and the Main Circuit Board. Claim 32 now calls for the modem and Main Circuit Boards to have separate processors. Claim 33 was amended to clarify the addressing of the Discovery Packet.

Independent claim 34 was amended to clarify the addressing of the Discovery Packet as well as to require separate processors in both the modem and Main Circuit Board. However, Independent claim 34 has been represented in its original form as claim 91, and will be discussed below. Claims 34-37 are now believed clearly allowable

Dependent claim 35 was amended in the same manner as claim 13, to incorporate the scope of claims 36 and 37 for purposes of reducing claim count. Claim 36 calls for the Discovery Packet to use UDP protocol. Claim 37 calls out several possible interconnections.

Claims 38-57 are withdrawn in view of the restriction/election requirement.

Independent claims 58 and 66 have been amended to clarify the addressing and communication of the Discovery Packet. Claims 58-75 are thus believed clearly allowable.

New Dependent claims 72-75 are presented with subject matter similar to that described in connection with amended dependent claims above.

New claims 76-89 have been added. Independent claim 76 adds clarification as described above to the nature of the Discovery Packet and it's communication to the Main Circuit Board. Consideration of the new claims is respectfully requested.

New claims 90-91 have also been added. These new claims are identically original claim 32 rewritten in independent form and original claim 34. These claims are believed clearly allowable as originally submitted. While other claims are also believed allowable, in the interest of assuring that the Examiner's concerns expressed during the telephone interview are addressed, those claims have been clarified by amendment. However, new claim 90-91 (old claim 32 and 34) being so clearly allowable, they are resubmitted without amendment. This is intended to assure that the next office action, if it contains new reasons for rejection, is not made final. Further discussion of these claims will follow.

Arguments

The Office Action's position, as understood, is that since the main circuit board of Liu contains the only processor in use, and since a software driver (HAL) runs on this processor, the claims can be viewed as transmitting a packet to the main circuit board containing the modem's IP address (e.g., during Lim's DHCP processes) and the IP address can thus be discovered. Applicants appreciate the Office Action's position in this regard and wishes to point out the following areas, at least one of which appear in each claim, wherein the Liu art falls short of an adequate disclosure to render the claims *prima facie* obvious. It is respectfully submitted that all claims as originally filed meet at least one of these criteria, and thus, should be considered to distinguish over Lim. However, in order to expedite prosecution of this application and enhance the clarity of the claims, Applicants have submitted clarifying amendments to help assure that the claims are properly interpreted. The following are areas of clear distinction in originally submitted claims as well as claims as amended:

- The term "Discovery Packet" is used in all claims and is defined in context in the specification, which also gives exemplary embodiments of such a packet. The "Discovery Packet" is designed and used as a packet that is broadcast from the modem or other managed component(s) to the Main Circuit Board in order to provide the IP address and possibly other information (e.g., status) to the Main Circuit Board. Neither Liu nor Lim nor any of the other art of record is believed to teach or suggest such a "Discovery Packet" or its use. Applicants are entitled to be their own lexicographer, and this term, when interpreted within the context of the specification clearly distinguishes over the art.
- Certain of the claims now, and as originally filed, call for a programmed processor within the modem. This is contrary to the teachings of Liu. Since Liu specifically teaches away from use of a processor on the modem, *prima* facie obviousness cannot be established based on this reference, and the function and advantages of the reference would be destroyed if modified to incorporate the processor on the modem. Accordingly, these claims believed to clearly distinguish over the cited.

- Certain of the claims now call for a programmed processor within both the modem and the Main Circuit Board. Again, this is contrary to the teachings of Liu as above, and thus, these claims are believed to clearly distinguish over the art.
- Certain of the claims now clarify that the Discovery Packet is transmitted to a broadcast address that can be monitored by the Main Circuit Board. There is no teaching or suggestion of such by the cited art. The Liu reference, at most, can possibly intercept a message in passing to discover an IP address. There is no suggestion that this occurs at all, but certainly not as a result of a message using a particular broadcast address.
- Certain of the claims have been amended to call for the Main Circuit Board or a processor thereon to monitor the modem interconnection for Discovery Packets addressed to a broadcast address. There is no teaching or suggestion of such in the cited art.

In view of these clear distinctions, Applicant submits that all claims are now in condition for allowance and such is respectfully requested at an early date.

Regarding New Claims 90 and 91

Regarding new claims 90-91, these new claims are identically original claim 32 rewritten in independent form and original claim 34. These claims are believed clearly allowable as originally submitted. The Liu reference is clearly directed toward a modem that uses the processor on the main circuit board, and clearly teaches that this has advantages. Such advantages include the ability to use modems from many manufacturers with a software driver interface (HAL) being used to adapt to the particular modem in use. Claims 90 and 91 – original claims rewritten for purposes of this discussion – each require that the modem have its own processor. Since Liu specifically teaches away from use of a processor on the modem, *prima* facie obviousness cannot be established based on this reference, and the function and advantages of the reference would be destroyed if modified to incorporate the processor on the modem. Accordingly, reconsideration and allowance of these claims in their original form is respectfully requested.

Other Arguments

Further arguments appear to be unnecessary, but for the formalities of certain aspects of patent prosecution. These arguments are believed unnecessary, but are presented solely in order to preserve Applicants' rights in any future Office Actions.

Regarding Applicant's Alleged Admissions

The Office Action Asserts that *"In the background of applicant's disclosure, applicant admits that it is known for main circuit boards to require knowing the IP address of a modem (page 2, lines 6-13)."* Applicants deny that any such admission has been made. The paragraph in question states explicitly the following:

> *" In general, Cable Modems and other such communication devices communicate over the cable or other media via IP (Internet Protocol.) Thus, an Internet Protocol (IP) address is assigned to the Cable Modem by the network administrator to facilitate network management and administrative functions. This may present difficulty, however, in providing a multiple circuit board modular approach to a Set-Top Box design in that the Main Board often needs to carry out actions requiring the IP address but may not have easy access to it since it is basically assigned to the Cable Modem. Thus, a mechanism is needed to communicate the IP address from the Cable Modem to the Main Circuit Board. It is also desirable to share a single display controlled by the Main Circuit Board to display not only information related generally to the operation of the Set-Top Box, but specifically to the Cable Modem. In each such case, the Main Circuit Board may require an IP address for the Cable Modem in order to utilize the common display."*

This discussion does not make the admission asserted. The Examiner should carefully note that the above paragraph, and indeed the entire background section, describes potential problems *"in providing a multiple circuit board modular approach to a Set-Top Box design"* such as that of certain embodiments of the present invention. Nowhere does it state that it is known to require knowing the IP address of the modem as asserted in the Office Action.

Similarly, nowhere is it asserted that these problems are known. It merely outlines some of the problems Applicants have addressed in making their invention. Others may never have known of or addressed similar problems. The undersigned assumes that the Examiner has erroneously interpreted the section of this application entitled "Background of the Invention" to be a description of the prior art. It is not. It is simply a discussion that provides background to the discussion of embodiments of the present invention, and issues that were addressed in certain embodiments consistent with the present invention. It makes no admissions of prior art, and it constitutes certain of Applicants' own teachings. All rejections based thereon are, thus, clearly based on improper hindsight reasoning which cannot be used to establish *prima facie* obviousness. Reconsideration is respectfully requested, along with removal of all rejections based upon such erroneously alleged admissions.

Regarding all instances of Official Notice

The undersigned notes that the Examiner has presented a rather extensive 28 page Office Action detailing reasons for rejection of all claims. The undersigned appreciates the Examiner's thorough discussions of all reasons for rejection, and appreciates the further discussion of such reasons in the above-noted telephone discussion. However, Applicants note that the Examiner has made extensive use of Official Notice in rejecting certain of the claims. Official Notice has been given for rejections of subject matter relating to 10 character ASCII character strings, 30 second intervals for discovery packets, using four byte integer status codes and data packet encryption at least.

MPEP 2144.03 provides that 'in limited circumstances, it is appropriate for an examiner to take official notice of facts not in the record or to rely on "common knowledge" in making a rejection, however such rejections should be judiciously applied. .... Official notice unsupported by documentary evidence should only be taken by the examiner where the facts asserted to be well-known, or to be common knowledge in the art are capable of instant and unquestionable demonstration as being well-known.' The MPEP further states that Applicant's failure to challenge the propriety of Official Notice is deemed an admission of the assertion of the Official Notice. Accordingly, Applicants are obligated to challenge each instance of Official Notice as

follows and require that the Examiner present evidence to support each instance of Official Notice in order to prevent such notice from being considered an admission. Applicants regret the additional burden this might place on the Examiner.

Applicants have found that a 10 character ASCII character string is well suited for use as an authentication code in the preferred embodiment, balancing proper authentication with efficiency. None of the cited art discloses such a code arrangement used in conjunction with all of the claim features (e.g., of claims 1, 2 and 5) as claimed. The Examiner asserts that this is notoriously well known due to the ability to provide a high number of unique character strings. To follow this reasoning, 1000 characters would be even better, thus there is no basis to conclude that use of 10 character codes is notoriously well known for this purpose.

Applicants have found that a 30 second intervals for discovery packets is well suited for use as an interval for transmission of discovery packets in the preferred embodiment. However, the Examiner has provided no basis for the assertion that notoriously well known to broadcast discovery packets every 30 seconds or any justification for why this is a "convenient time frame".

Applicants have found that using four byte integer modem status codes provides enough codes for adequate status information without waste of bandwidth. The Examiner argues that use of 4 byte integers as codes within packets is "notoriously well known ... for providing a very comprehensive selection of codes for transmitting information". However, nothing about this argument suggests that this is an advantageous size of code for Applicants' environment. As above, following Examiner's reasoning, 1000 byte integer codes would provide an even more comprehensive selection of codes.

While data packet encryption is known, the Examiner has failed to provide evidence that encryption of authentication codes in a Discovery Packet or otherwise as claimed and used by Applicants is "notoriously well known."

Again, Applicants regret the need to challenge the Examiner's assertions, but must do so to avoid them becoming admissions. Accordingly, if the Examiner persists with these assertions, Applicants require that they be substantiated by the Examiner as called for in MPEP 2144.03.

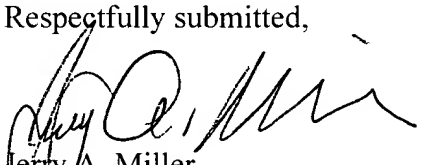
Other Distinctions

The undersigned additionally notes that many other distinctions exist between the cited references and the invention as claimed. However, in view of the clear distinctions pointed out above, further discussion is believed to be unnecessary at this time. Failure to address each point raised in the Office Action should accordingly not be viewed as accession to the Examiner's position.

No amendment made herein was related to the statutory requirements of patentability unless expressly stated herein. No amendment made was for the purpose of narrowing the scope of any claim unless an argument has been made herein that such amendment has been made to distinguish over a particular reference or combination of references.

In view of this communication, all claims are now believed to be in condition for allowance and such is respectfully requested at an early date. If further matters remain to be resolved, the undersigned respectfully requests the courtesy of an interview. The undersigned can be reached at the telephone number below.

Respectfully submitted,



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